The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs

Michael Caccuitto
SBIR/STTR Program Coordinator
OUSD(AT&L)/OSBP

Outline

- Program Overview
- Program Impact
- Getting Involved

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SBIR/STTR Legislative Background

- Small Business Innovation Research (SBIR) Program. Established by the Small Business Innovation Development Act of 1982 (P.L. 97-219)
  - 2.5% assessment of Extramural RDT&E Budgets in excess of $100 million
  - Authorized through FY2008
- Small Business Technology Transfer Program. Established by the Small Business Research and Development Enhancement Act of 1992 (PL 102-564)
  - 0.3% assessment of Extramural RDT&E Budgets in excess of $1 billion
  - Authorized through FY2009

Broad purpose: share federal R&D with small businesses and leverage unique innovative potential of small business

Program Statutory Objectives

- SBIR
  - Stimulate technological innovation
  - Meet Federal R&D needs
  - Foster and encourage participation by minorities and disadvantaged persons in technological innovation
  - Increase private-sector commercialization of innovations derived from Federal R&D

- STTR
  - Stimulate and foster scientific and technological innovation through cooperative research
  - Foster technology transfer between small business concerns and research institutions

Program Eligibility Criteria

- SBIR
  - Organized for- profit U.S. business, located in the US
  - At least 51% U.S.- owned by individuals and independently operated
  - 500 or fewer employees
  - Principal Investigator's primary employment with small business during project
  - During Phase 1, at least 2/3 of work must be performed by the SBIR contract awardee, at least ½ in Phase 2
- STTR
  - Formal Cooperative R&D Effort (Minimum 40% by small business, 30% by U.S. research institution)
  - U.S. Research Institution (College or University; other R&D center)
  - Intellectual Property Agreement - Allocation of Rights in IP and Rights to Carry out Follow-on R&D and Commercialization

Eligibility determined at time of award.

SBIR/STTR Program Structure

SBIR/STTR Funds:

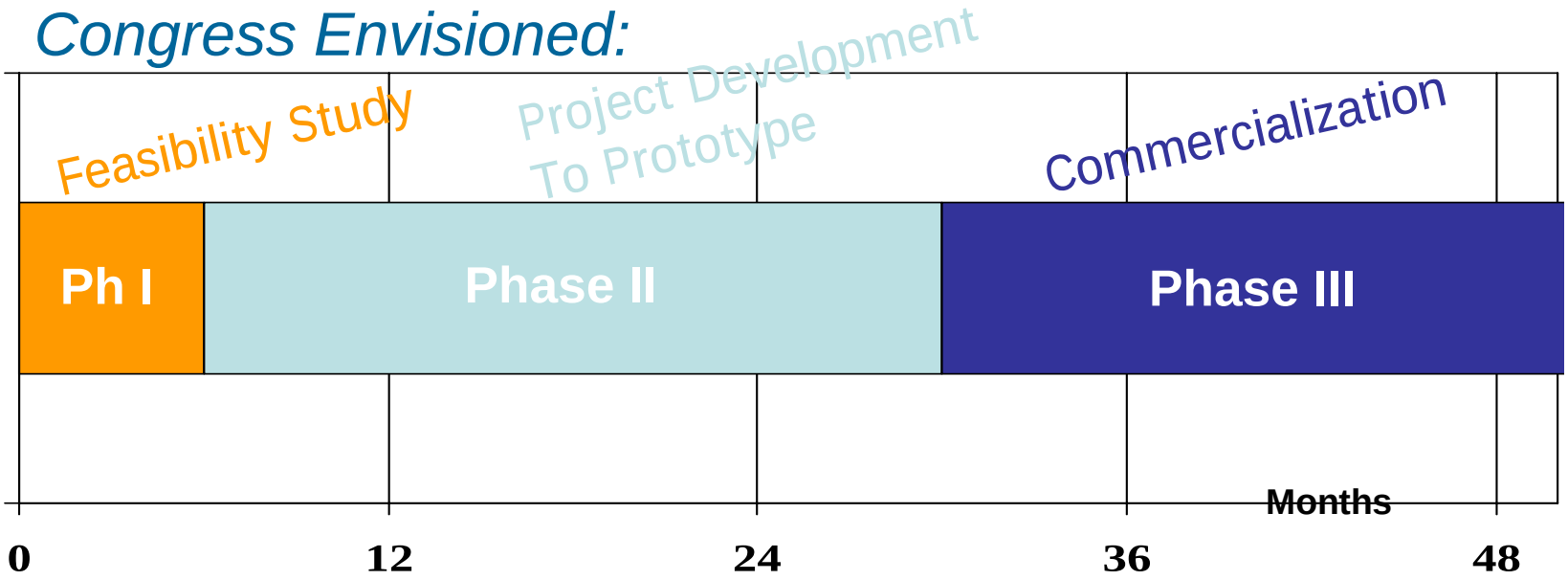
- **Phase I:** Project Feasibility
  - Generally 6 months, not exceeding $100,000
- **Phase II:** Project Development to Prototype
  - Generally 2 years, not exceeding $750,000

SBIR/STTR Does Not Fund:

- **Phase III:** Commercialization in Military and/or Private Sector
  - Sale of product or service
  - Additional R&D of technology
  - Manufacturing/production start-up
  - Marketing start-up/marketing
  - Training workforce to manufacture or sell new products

Three-Phased Program Concept

Congress Envisioned:



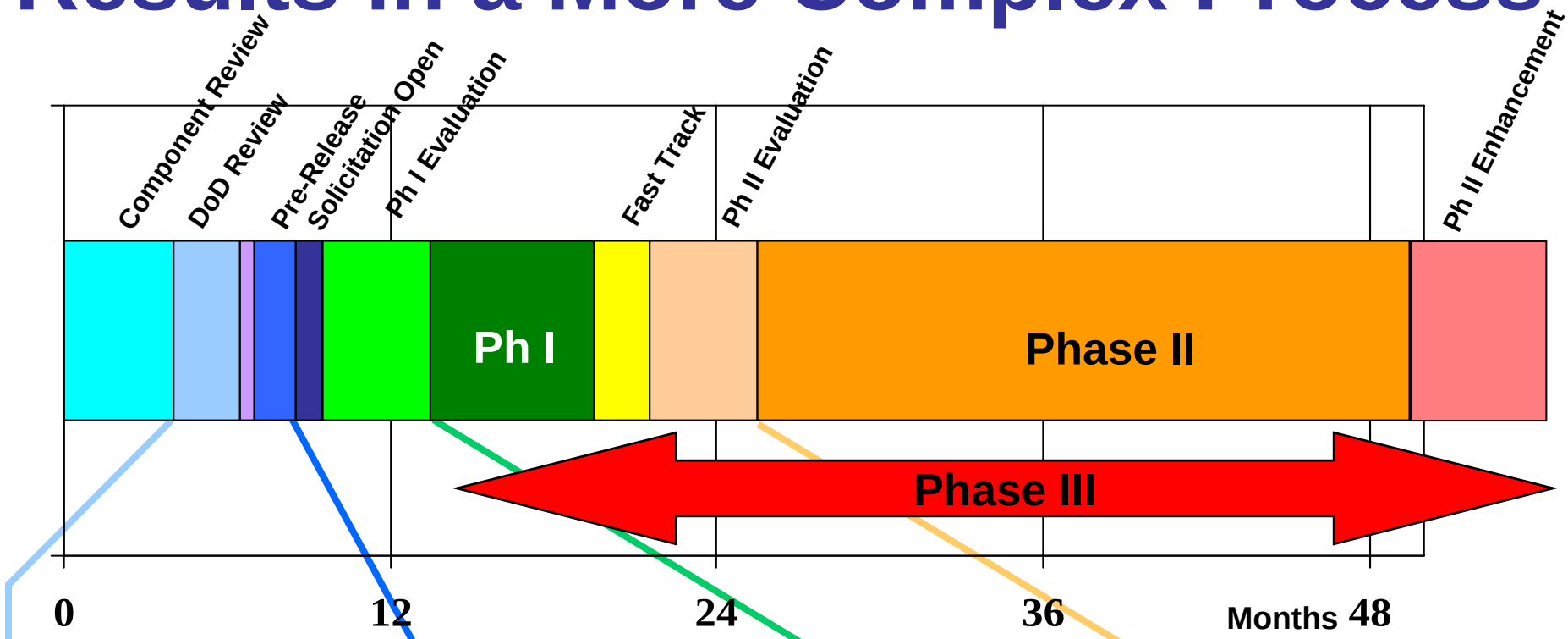
SBA Policy Added:

- Topic Solicitation
- Phase I Evaluation
- Phase II Evaluation

DoD Implementation Added:

- Topic Review
- Company Commercialization Report
- Fast Track
- Phase II Enhancement

Results in a More Complex Process



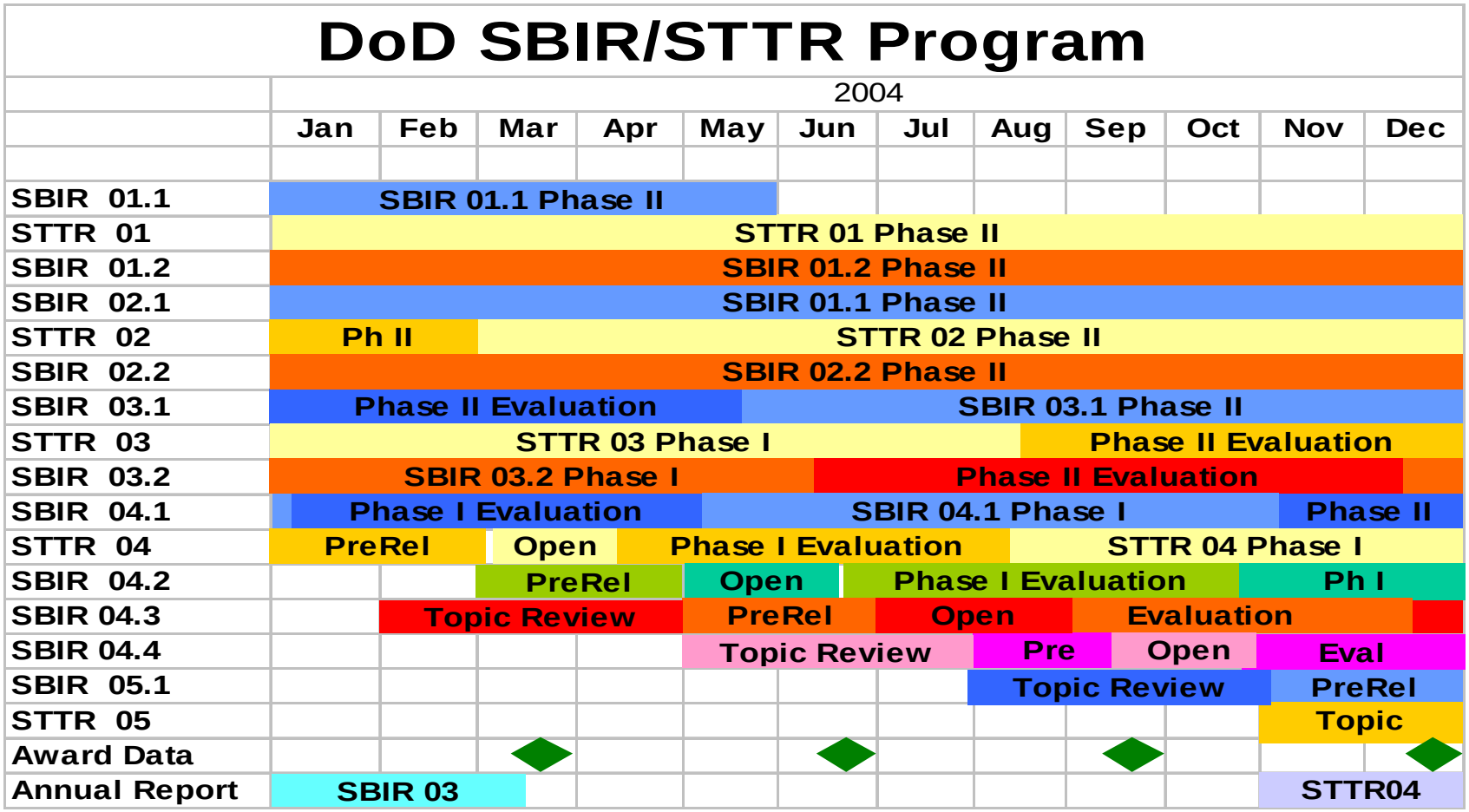
Topic Generation & Review

Solicitation PreRelease & Open

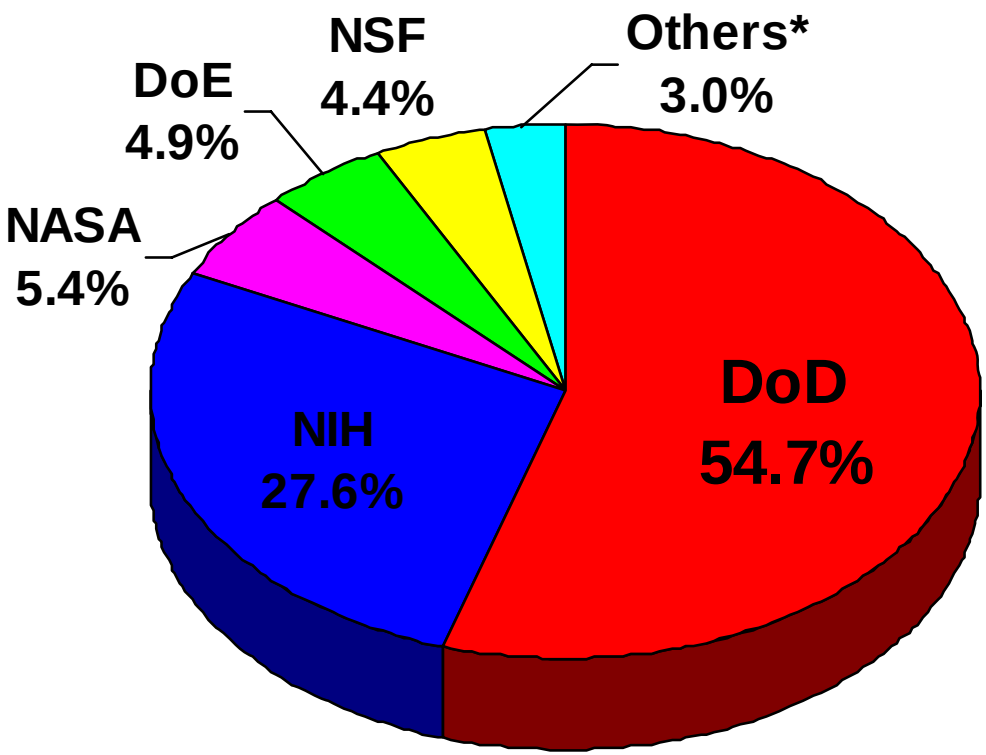
Phase I Eval & Award

Phase II Eval & Award

Multiple Solicitations per Year Adds to Program Complexity



DoD is about Half the Federal SBIR Program



Largest of 11 Participating Federal Agencies

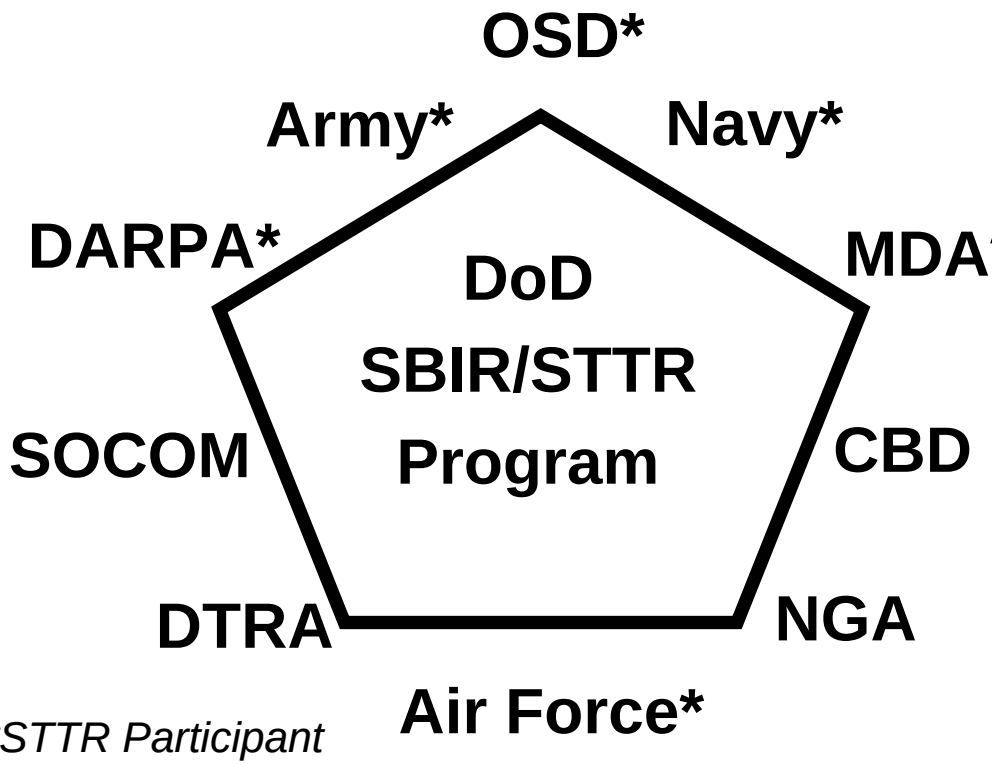
DoD SBIR FY06 Budget

$1.13B

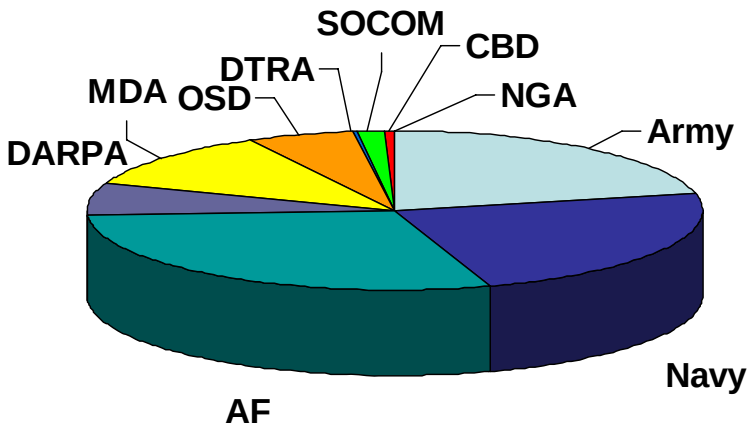
DoD STTR FY06 Budget

$130M

DoD SBIR/STTR Program Organization & Budget

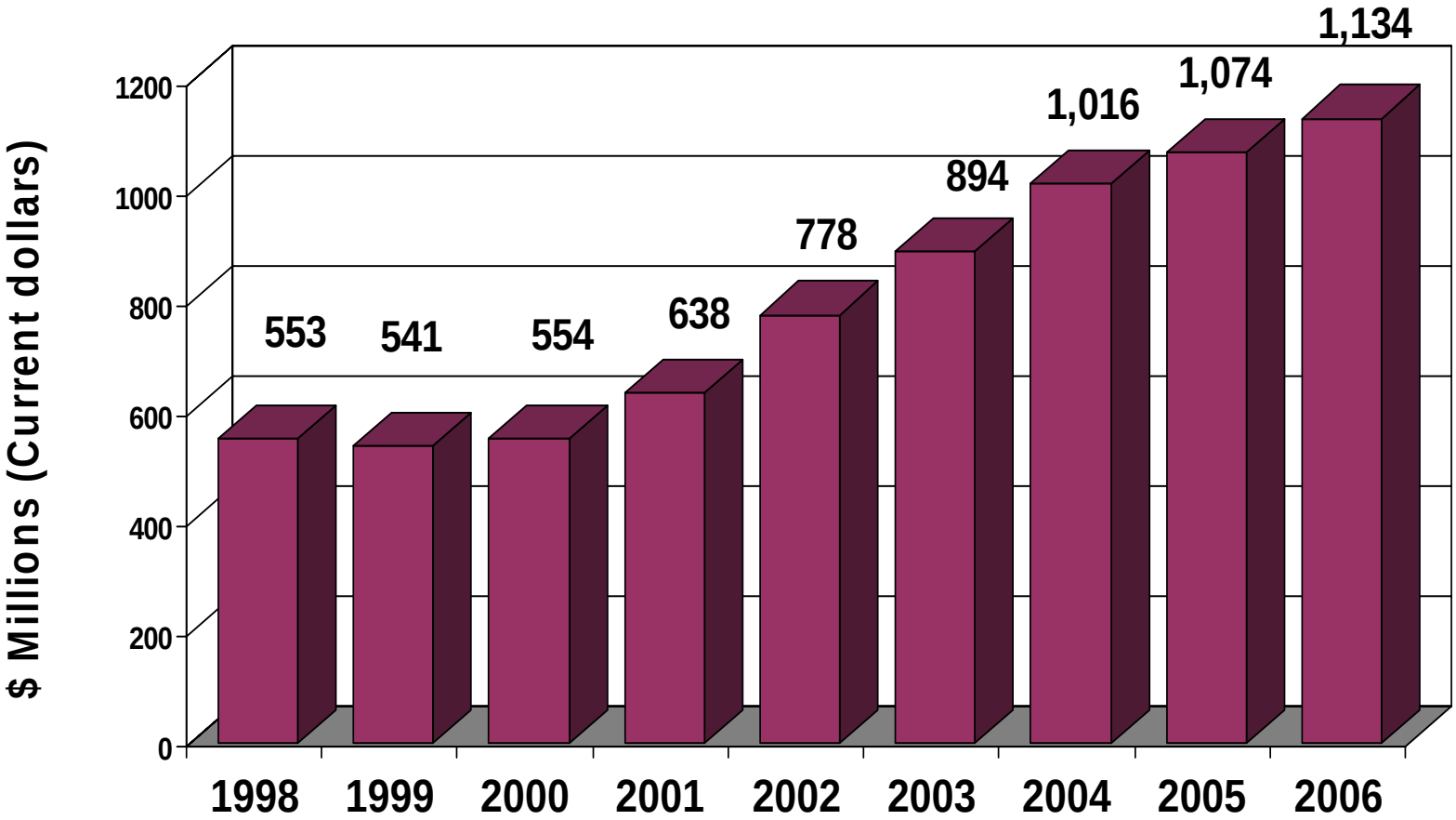


**STTR Participant*



The DoD SBIR Program has ten participating components, STTR has six.

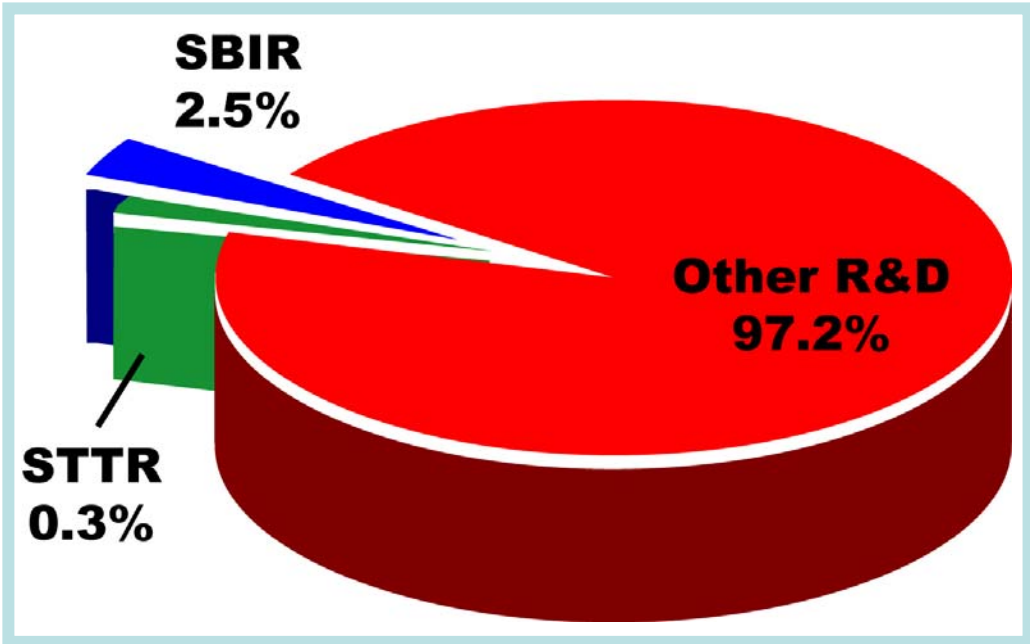
SBIR Budget Growth



In general, increasing RDT&E appropriations have driven strong SBIR budget growth.

SBIR/STTR: Small Piece of R&D Pie

SBIR and STTR are a small percentage of the total extramural R&D budget, but is where small businesses demonstrate their capability to meet federal R&D needs

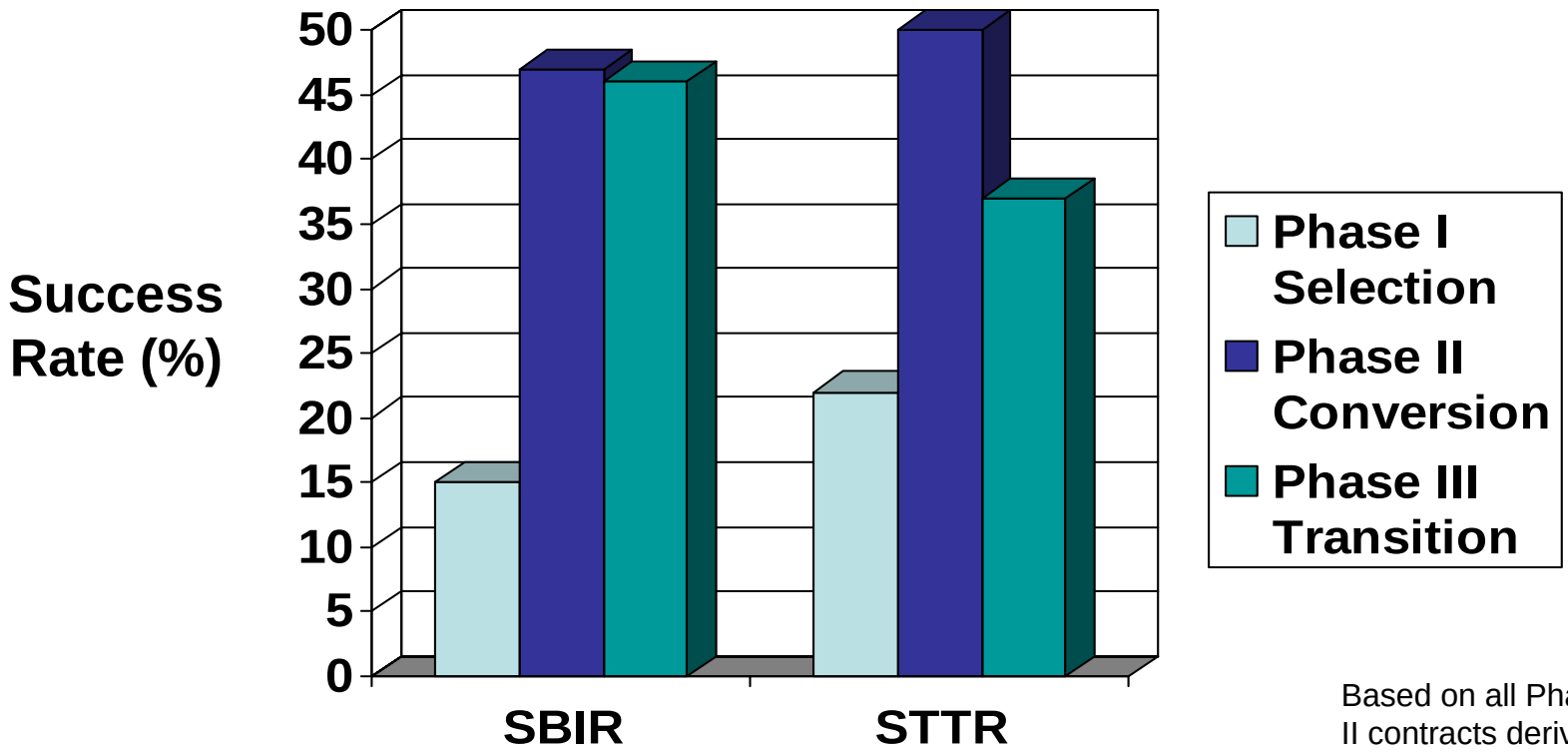


Total Extramural R&D Budget

DoD FY 2005 SBIR Program Budget, Proposals, and Awards

DoD Component	SBIR Budget	# Topics	# Ph I proposals	# Ph I awards	# Ph II proposals	# Ph II awards
Army	$233,836,000	245	3,731	705	392	123
Navy	$253,692,000	163	2,663	466	290	290
Air Force	$317,883,800	249	3,356	608	584	339
DARPA	$67,298,000	28	490	74	84	81
DTRA	$6,143,000	14	162	40	4	4
MDA	$124,013,325	69	1,509	240	169	102
SOCOM	$12,926,000	11	199	25	12	14
CBD	$5,860,000	23	239	21	21	7
OSD	$51,990,000	68	1,100	163	91	38
NGA	$690,260	1	31	2	2	1
All DoD	$1,074,332,385	871	13,480	2,344	1,649	999

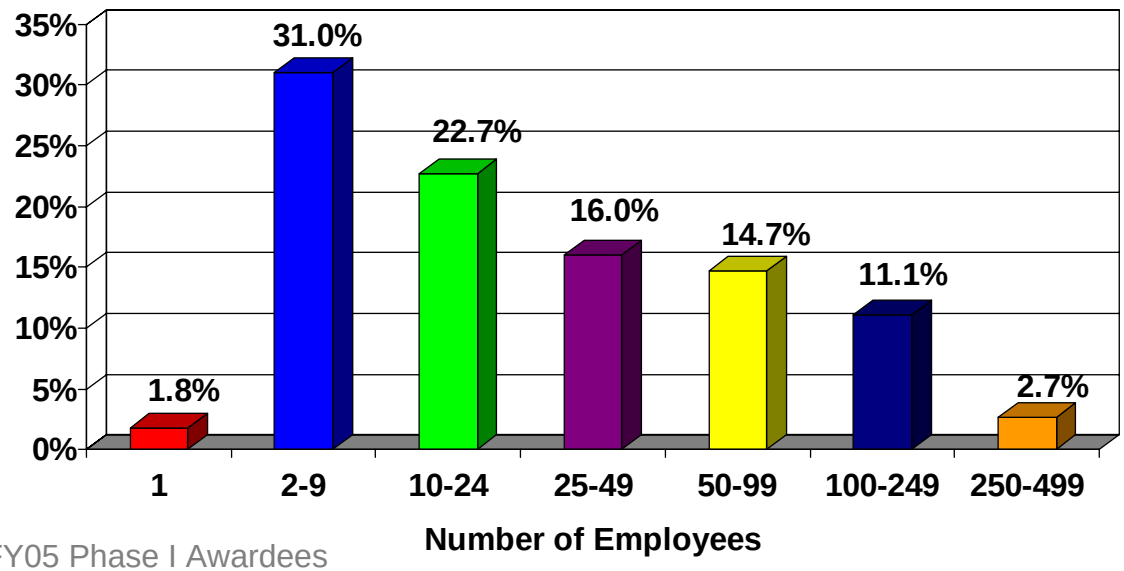
Historical Success/Transition Rates



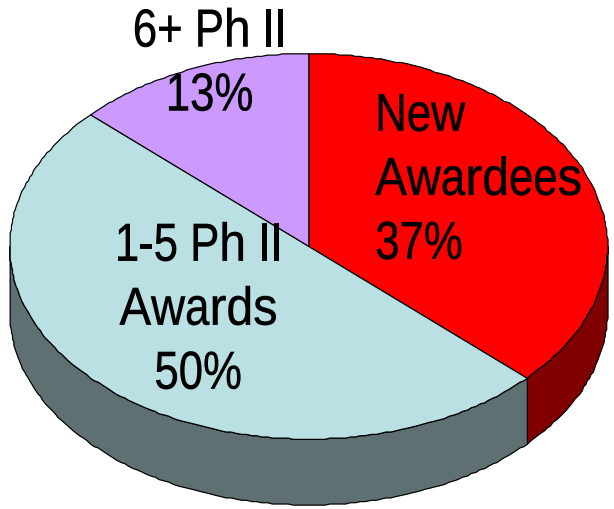
Based on all Phase I and Phase II contracts derived from 1994-2003 solicitations

Firm Participation: Phase I Awardees are

- ✓ Typically very small
- ✓ Fairly new to the programs



FY05 Phase I Awardees



Firm data as of March 2006

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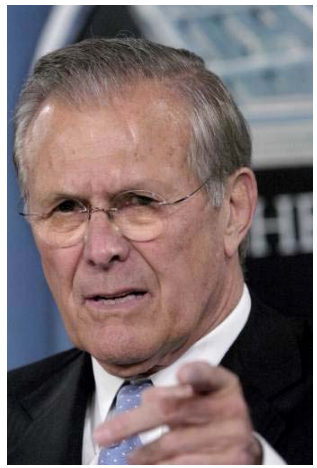
DoD and USD(AT&L) Goals: SBIR/STTR in DoD

- Mission: Leverage small business technology innovation for the warfighter and the nation.
- Directly supports 3 AT&L Goals:
  - Strategic and Tactical Acquisition Excellence
  - Focused Technology to meet Warfighter Needs
  - Reliable and Cost-effective Industrial Capabilities Sufficient to meet Strategic Objectives



SECDEF

The Honorable

Donald Rumsfeld

USD AT&L

The Honorable

Ken Krieg

Program Focus

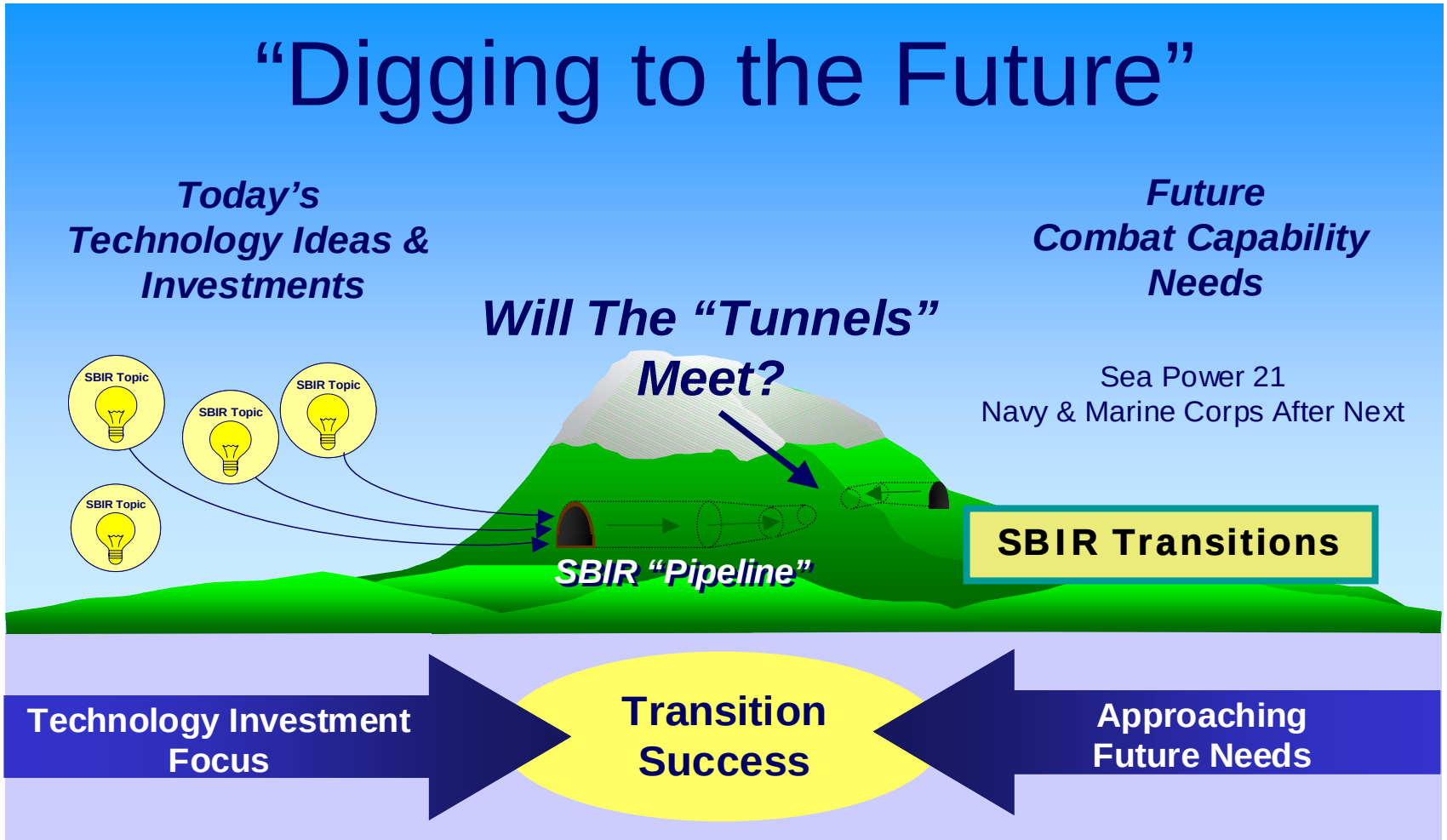
- Improving program efficiency
- Enhancing effectiveness – commercialization/technology transition
- Engaging/Increasing alignment with other Department initiatives
- Increasing enabling activity within industry

DoD SBIR/STTR Policy

- USD(A&T) – Mr. Kaminski (1995/6)
  - Reduce Interval between Proposal Receipt and Contract Award
  - Established Fast Track Program
  - Established Uniform DoD-wide Topic Review Process
- USD(A&T) – Dr. Gansler (1998/9)
  - Directed Systematic Collection of Commercialization Metrics
  - Required Acquisition Program Topic Endorsement/Sponsorship
  - Mandated Acquisition Program Liaisons
  - Commercialization Achievement Index used in Source Selection
  - Established Phase II Enhancement Program
- USD(AT&L) – Mr. Wynne (2004)
  - Reaffirmed Topic Review Process with OSD Oversight
- USD(AT&L) – Mr. Krieg (2006)
  - Established "Beyond Phase II" Conference Activity
  - Implemented Commercialization Pilot Program (CPP) Authority

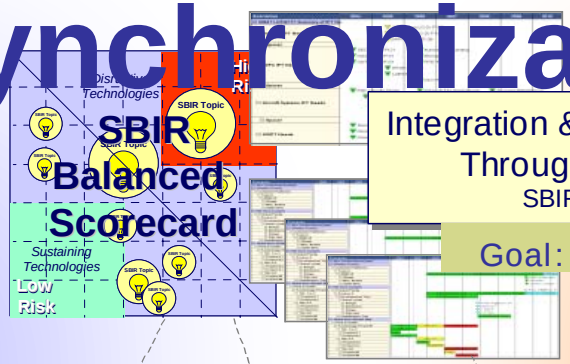
DoD has history of taking steps to improve the effectiveness of the SBIR program.

The SBIR Management Challenge



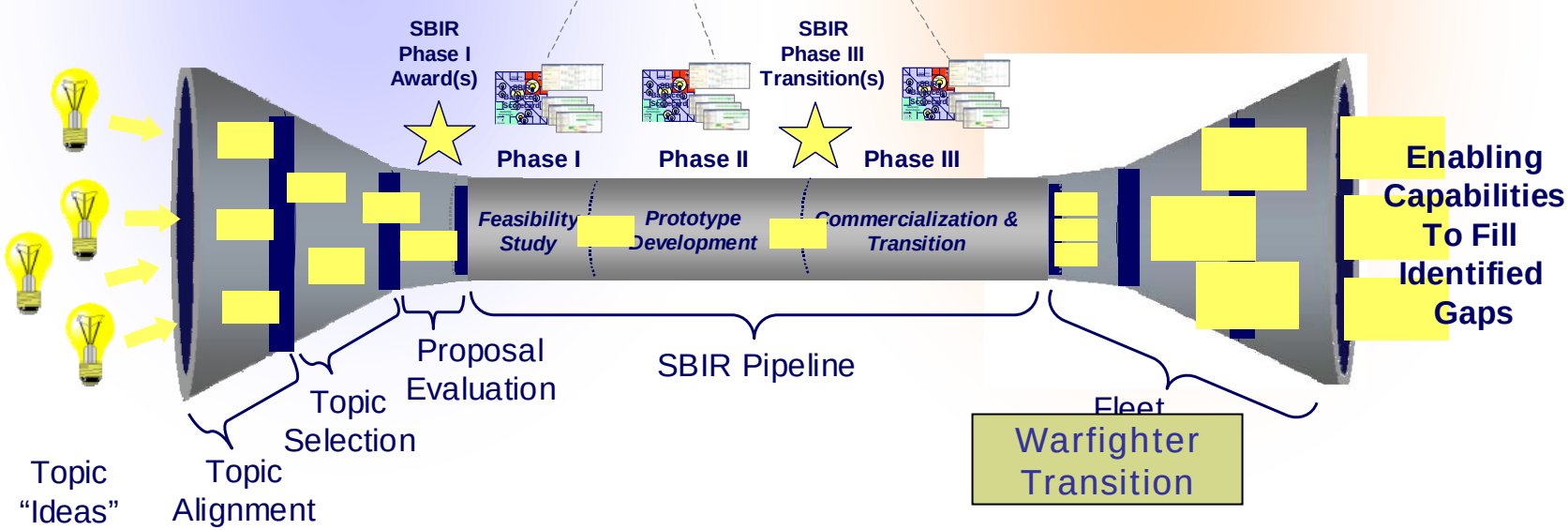
Transition success hinges upon strategic technology investment focus and roadmapping towards future capability needs

Strategic Alignment & Synchronization



Integration & Synchronization Through Roadmaps
SBIR-PEO-PMA

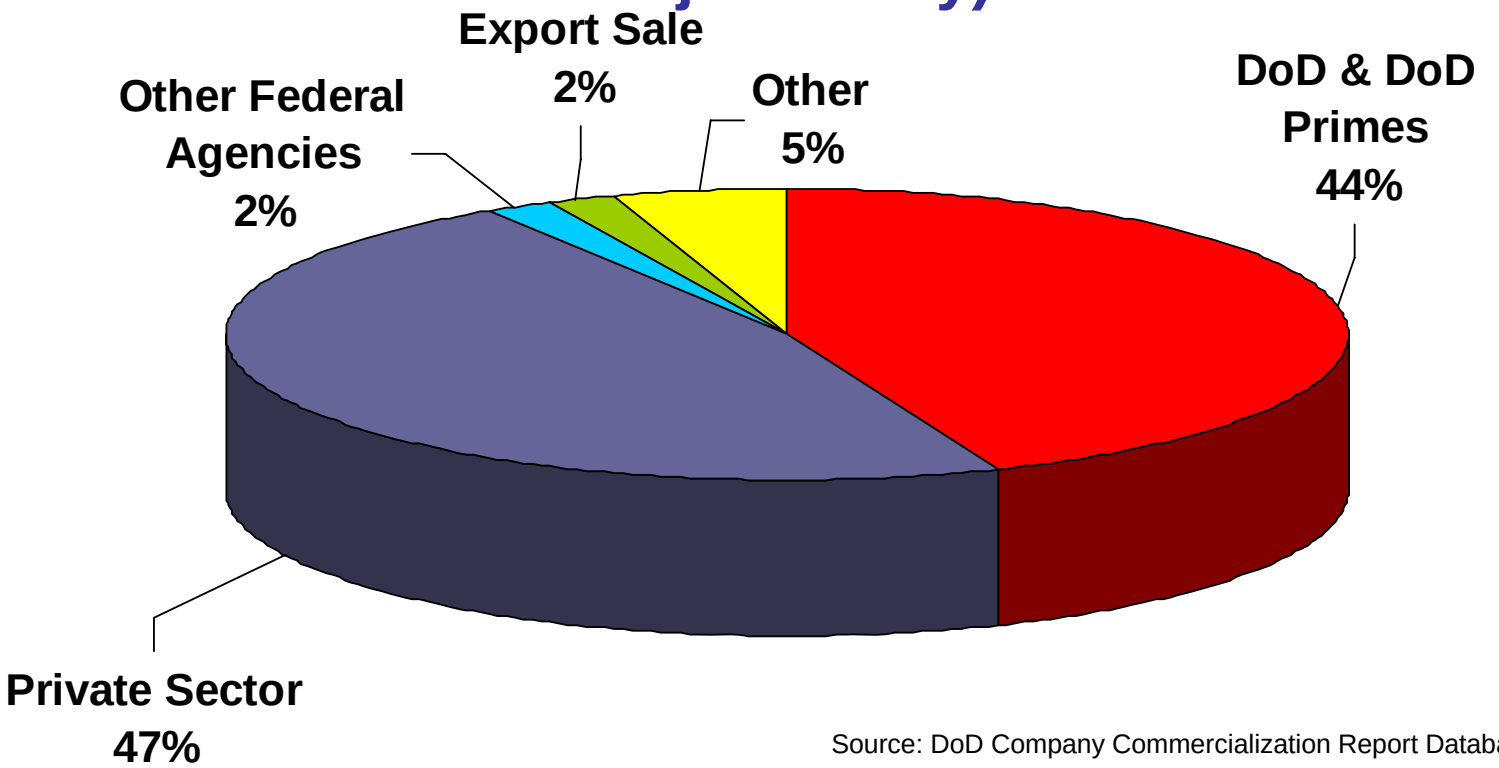
Goal: Transition



The PEOs and PMs play critical roles throughout the SBIR process enabling integration and synchronization of technology investments with future capability and product-line roadmaps

SBIR Phase III Commercialization

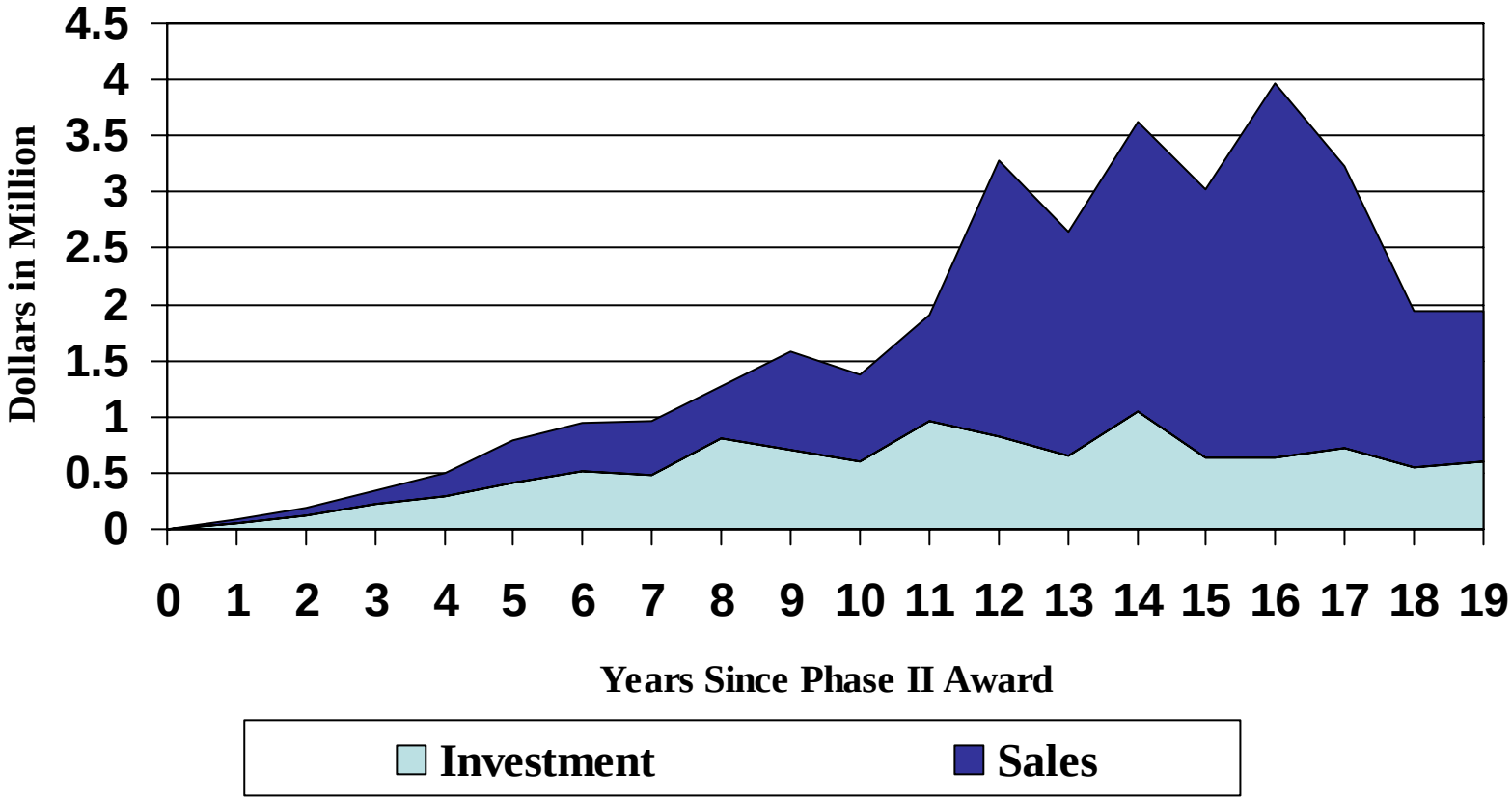
(Reported by firms submitting to DoD in 2000-2005, DoD Projects only)



Source: DoD Company Commercialization Report Database

Non-defense sales and investment slightly exceed that of DoD and DoD Primes combined—significant spin-off achieved by balanced investment program.

Phase III Composition: Average Investment vs. Average Sales



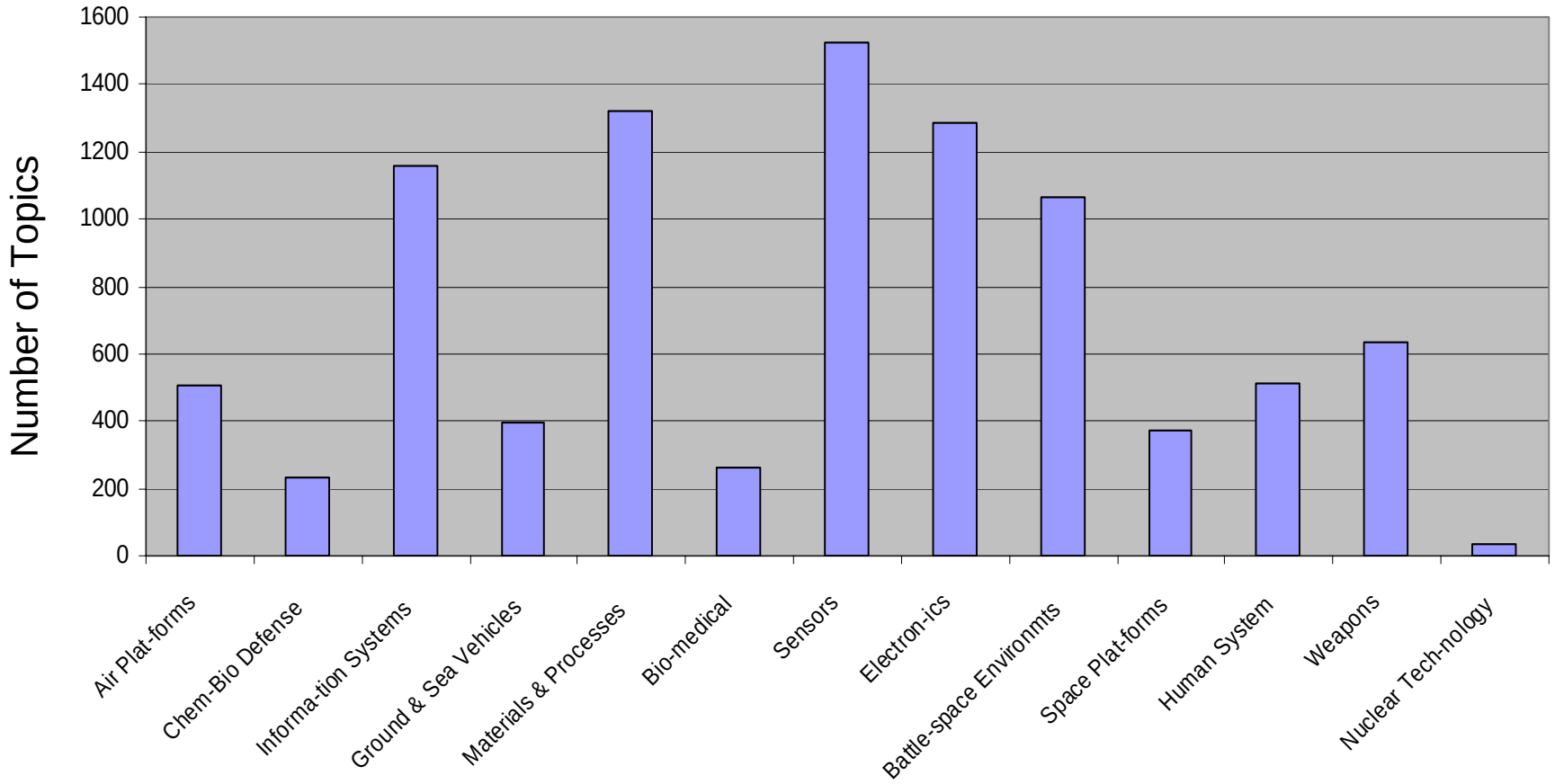
Source: DoD Company Commercialization Report Database

Average Investment Leads Average Sales for First 8 Years after Phase II Award—achieving full commercialization takes time.

DoD Technology Areas

- ✓ Air Platforms
- ✓ Battlespace Environments
- ✓ Chemical & Biological Defense
- ✓ Weapons
- ✓ Human Systems
- ✓ Materials & Processes
- ✓ Information Systems Technology
- ✓ Space Platforms Technology
- ✓ Biomedical
- ✓ Sensors, Electronics & Electronic Warfare
- ✓ Nuclear Technology
- ✓ Ground and Sea Vehicles Technology

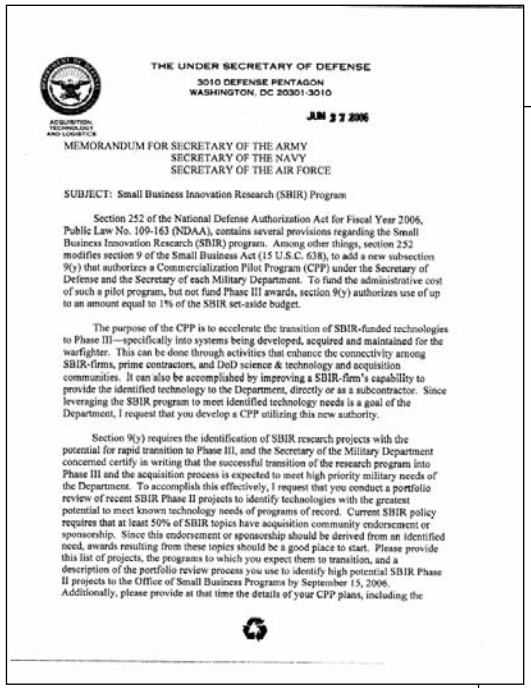
Topic Technology Areas: Focus of SBIR Investments



SBIR investment portfolio is well-balanced across DTAP-defined key technology areas.

Source: SBIR & STTR solicitations, FY00-FY04

Commercialization Pilot Program



THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

JUN 27 2006

MEMORANDUM FOR SECRETARY OF THE ARMY
SECRETARY OF THE NAVY
SECRETARY OF THE AIR FORCE

SUBJECT: Small Business Innovation Research (SBIR) Program

Section 252 of the National Defense Authorization Act for Fiscal Year 2006, Public Law No. 109-163 (NDAA), contains several provisions regarding the Small Business Innovation Research (SBIR) program. Among other things, section 252 modifies section 9 of the Small Business Act (15 U.S.C. 638), to add a new subsection 9(y) that authorizes a Commercialization Pilot Program (CPP) under the Secretary of Defense and the Secretary of each Military Department. To fund the administrative cost of such a pilot program, but not fund Phase III awards, section 9(y) authorizes use of up to an amount equal to 1% of the SBIR set-aside budget.

The purpose of the CPP is to accelerate the transition of SBIR-funded technologies to Phase III—specifically into systems being developed, acquired and maintained for the warfighter. This can be done through activities that enhance the connectivity among SBIR-firms, prime contractors, and DoD science & technology and acquisition communities. It can also be accomplished by improving a SBIR-firm's capability to provide the identified technology to the Department, directly or as a subcontractor. Since leveraging the SBIR program to meet identified technology needs is a goal of the Department, I request that you develop a CPP utilizing this new authority.

Section 9(y) requires the identification of SBIR research projects with the potential for rapid transition to Phase III, and the Secretary of the Military Department concerned certify in writing that the successful transition of the research program into Phase III and the acquisition process is expected to meet high priority military needs of the Department. To accomplish this effectively, I request that you conduct a portfolio review of recent SBIR Phase II projects to identify technologies with the greatest potential to meet known technology needs of programs of record. Current SBIR policy requires that at least 50% of SBIR topics have acquisition community endorsement or sponsorship. Since this endorsement or sponsorship should be derived from an identified need, awards resulting from these topics should be a good place to start. Please provide this list of projects, the programs to which you expect them to transition, and a description of the portfolio review process you use to identify high potential SBIR Phase II projects to the Office of Small Business Programs by September 15, 2006. Additionally, please provide at that time the details of your CPP plans, including the

amount of funds employed to support the CPP, how you intend to use the funding authority, to include activities and incentives you plan to employ to facilitate the transition, and what results you expect to achieve.

To aid identification of SBIR technologies with the highest transition potential, the Department will sponsor an annual "Beyond Phase II" conference in early 2007 to bring together recent SBIR Phase II award winners with major prime contractors and DoD system developers and acquirers. This will allow you and system contractors to survey directly SBIR Phase II award technologies from across the Department as well as from within your Component to identify those that meet a need. We will explore the development of activities adjunct to the annual conference to expand it as a tool to enable successful technology transition. I request your full support of this event.

The SBIR Program has long been a source of innovation—we must make it serve the warfighter better. Beyond the above actions in response to the new section 9(y) of the Small Business Act, it is important to improve how the SBIR program is implemented and used within our institutions. We must identify and proliferate best practices to be sure we are developing the right technologies and effectively transitioning them. This means ensuring we are generating and funding the right projects, employing the right incentives, and leveraging all available technology transition tools. I request your personal support and attention to accomplish this. My office has recently been asked by the Senate and House Small Business Committees to report on our progress. Mr. Frank Ramos, Director of Small Business Programs on my staff, will be contacting you for support in developing a status report.

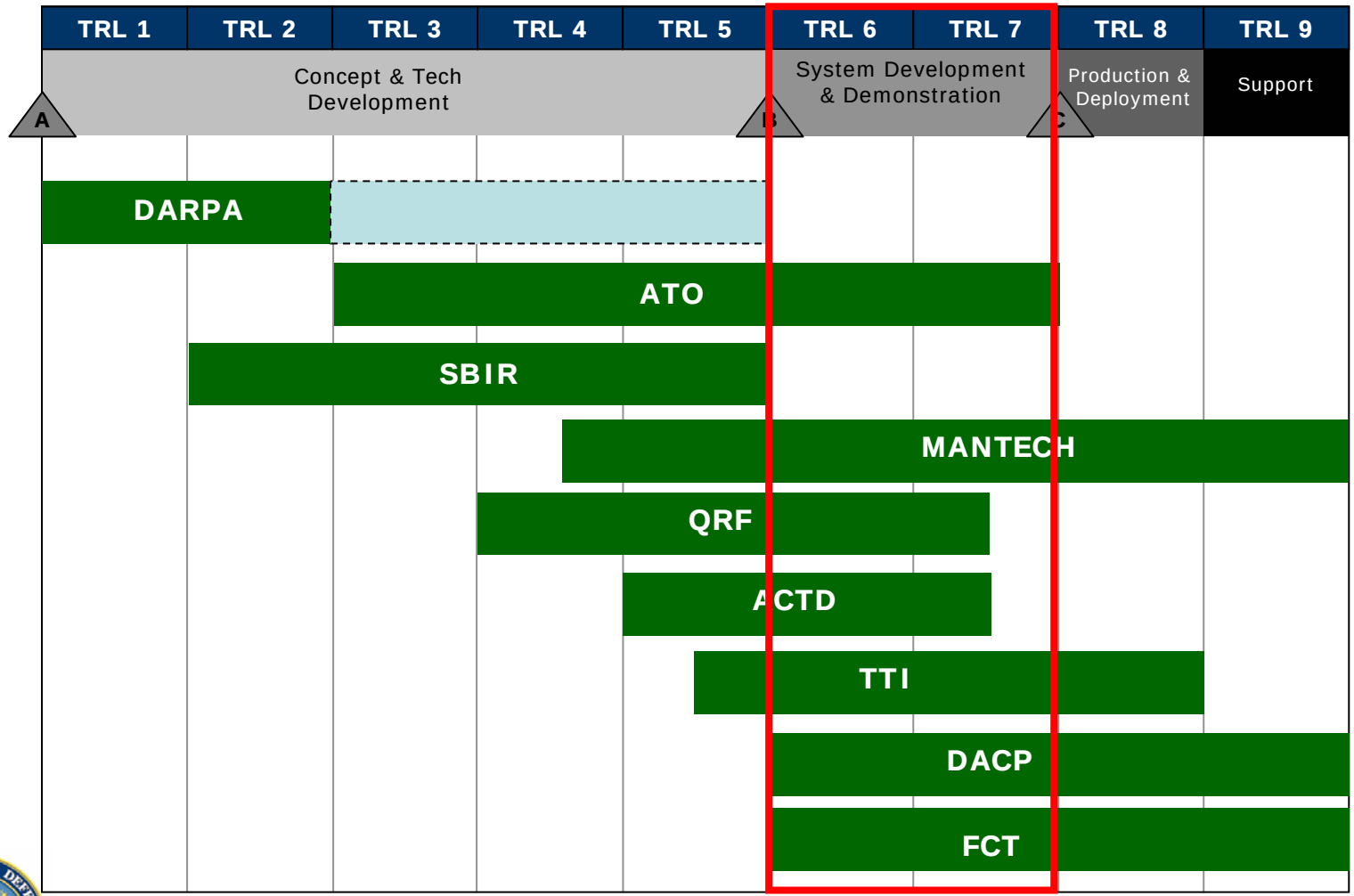
cc:
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARY OF THE ARMY (ACQUISITION, LOGISTICS AND TECHNOLOGY)
ASSISTANT SECRETARY OF THE NAVY (RESEARCH, DEVELOPMENT AND ACQUISITION)
ASSISTANT SECRETARY OF THE AIR FORCE (ACQUISITION)

June 27, 2006 USD(AT&L) Memo

- Requests 3 MILDEP Secretaries develop and implement CPPs
- Report plans and initial priority list to OSD by mid-September '06
- Support "Beyond Phase II" SBIR technology transition conference
- Make institutional and process changes required to improve SBIR program effectiveness

Instructs MILDEPs to make firm link between S&T and acquisition communities, and address high priority military needs.

Technology Transition Activities



Beyond SBIR Phase II: Bringing Technological Innovation to the Warfighter Conference

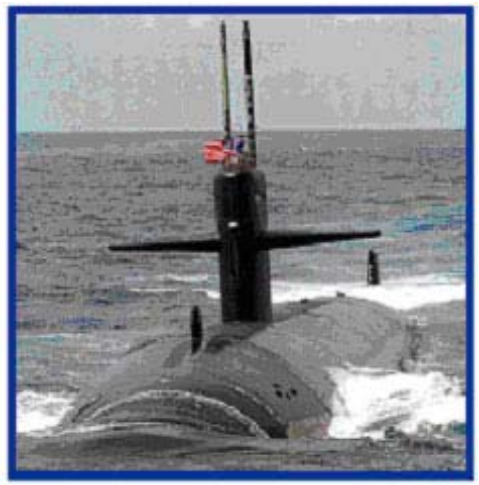
- Invitation-Only
  - Recent SBIR Phase II Award Winners
  - Major Prime Contractors
  - DoD systems developers and acquirers
- Pre-arranged 20-minute "Technology Matchmaking" meetings
- Panel discussions of advanced topics on transitioning into Phase III

Centerpiece DoD event to showcase SBIR technologies to enable technology transition.

Success Stories

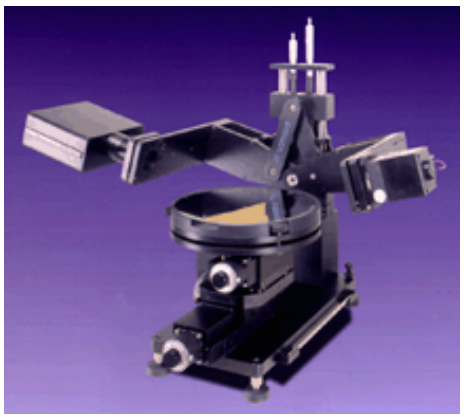
Small Arms Protective Inserts (SAPI)

Phraselator: hand-held phrase translation system



Multi-Purpose Processor (MPP) and associated Multi-Purpose Transportable Middleware (MTM)

World's first whole-spacecraft vibration isolation system.



Commercially-viable method For improved semiconductor wafer production

QC-40 DSP board, which launched on Mighty-SatII Spacecraft

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SBIR Resource Center: www.dodsbir.net

FY07 Solicitation Schedule

SBIR:	07.1 open:	December 6, 2006
	close:	January 10 at 6 a.m. EST
	07.2 open:	May 14, 2007
	close:	June 13 at 6 a.m. EST
	07.3 open:	August 20, 2007
	close:	September 19 at 6 a.m.
STTR:	07 open:	February 20, 2007
	close:	March 21 at 6 a.m. EST

Solicitations are pre-released for Q&A 4 weeks prior to open date

Evaluation Criteria

- ✓ Soundness, technical merit, and innovation of proposed approach and its incremental progress toward topic or subtopic solution

- ✓ Qualifications of the firm and team to perform R&D and commercialize results

- ✓ Potential for commercialization

Tips for Succeeding

- Involve customers from the beginning (pre-Phase I)
- Build a management team with both R&D and management/marketing capabilities
- Conduct a strategic assessment, identify your strengths and weaknesses, and determine how to access needed resources
- Select topics consistent with your business strategy
- If you don't have a plan, make one
- Build strategic partnerships
- Engage TPOCs during Pre-release
- Be persistent

Next Steps

- Utilize the Internet to read about DoD SBIR
- Review SBIR/STTR Solicitation carefully – Both the DoD and Component sections
- Seek out local resources & assistance
- Call the DoD Help Desk for specific questions
- Attend an SBIR National Conference
- Get proposals in early

Questions?

- ✓Contact the DoD SBIR/STTR Help Desk
  - **866-724-7457**
  - **www.dodsbir.net/helpdesk**